

# Statement of Basis of the Federal Operating Permit

Ector County Energy Center LLC

Site Name: Ector County Energy Center  
Physical Location: 8200 Ob Hold Rd  
Nearest City: Goldsmith  
County: Ector

Permit Number: O3805  
Project Type: Initial Issuance

The North American Industry Classification System (NAICS) Code: 221112  
NAICS Name: Fossil Fuel Electric Power Generation

This Statement of Basis sets forth the legal and factual basis for the draft permit conditions in accordance with 30 TAC §122.201(a)(4). An application for initial permit issuance has been submitted in accordance with 30 TAC § 122.201. This document may include the following information:

- A description of the facility/area process description;
- A basis for applying permit shields;
- A list of the federal regulatory applicability determinations;
- A table listing the determination of applicable requirements;
- A list of the New Source Review Requirements;
- The rationale for periodic monitoring methods selected;
- The rationale for compliance assurance methods selected;
- A compliance status; and
- A list of available unit attribute forms.

Prepared on: January 31, 2018

## **Operating Permit Basis of Determination**

### **Permit Area Process Description**

Ector County Energy Center operates two natural gas-fired, simple-cycle combustion turbine generators (CTGs), which are capable of generating approximately 326 MW. The CTGs are designed for peaking service, including daily startup and shutdown and extended periods of operation or non-operation. The power generating equipment and ancillary equipment that are sources of emissions at the site include:

- Two identical, simple-cycle, natural gas-fired CTGs equipped with low-NO<sub>x</sub> emissions combustion technology
- Lube oil vents for the turbine lube oil recirculation systems
- Piping fugitives associated with the natural gas fuel delivery and lube oil systems

#### Combustion Turbine Generators

A typical combustion turbine generator (CTG) combusts natural gas to rotate a generator in order to produce electrical power. The main components of a CTG consist of a compressor, combustor, turbine, and generator. The compressor pressurizes combustion air to the combustor where the fuel is mixed with the combustion air and burned. Hot exhaust gases then enter the turbine where the gases expand across the turbine blades, driving a shaft to power an electric generator. The exhaust gases from the CTGs for the Ector County Energy Center are routed to their respective stacks (Units CT-1 and CT-2). The temperature of the inlet air to the CTGs is lowered using evaporative cooling to increase the mass air flow through the turbines and achieve maximum turbine power output on days with warm to hot ambient conditions. In addition, a natural gas-fired dew-point heater is used to heat the natural gas supply going to the combustion turbines.

Each GE 7FA.03 combustion turbine is designed to operate at a nominal 165 MW, with a 10,350 Btu/kWh higher heating value (HHV) heat rate. NO<sub>x</sub> emissions are controlled via GE's DLN (dry low- NO<sub>x</sub>) 2.6 combustion technology for the 7FA.03 model. The typical operating range of the GE units is between 48 percent and 100 percent of base load.

#### Lube Oil Recirculation System

Both of the CTGs are equipped with a lube oil recirculation system to lubricate moving parts of the turbines. Emissions of condensed lube oil droplets from the lube oil system are exhausted through vapor extraction vents serving the CTGs, and these emissions are controlled with mist eliminators. Equipment and piping components in lube oil service are sources of fugitive emissions of lube oil vapor.

#### Natural Gas System

Natural gas is delivered to the site via pipeline, metered, and piped to the combustion turbines. Piping and fittings associated with the natural gas-fuel delivery system are sources of fugitive emissions.

#### Startup/Shutdown Activities

CTG startup and shutdown activities are part of the routine operations at the facility. For the combustion turbine, startup is defined as the period beginning when the gas turbine receives a "turbine start" signal and an initial flame detection signal is recorded in the plant's control system and ending when the combustion turbine output reaches the lean premix operating mode. The shutdown period is defined as the period beginning when the gas turbine receives a "turbine stop" command and the generator output drops below the minimum stable load and ending when a flame detection signal is no longer recorded in the plant's control system. Typically, startups and shutdowns will not exceed 60 minutes.

#### Natural Gas-Fired Dew-Point Heater

A 9 MMBtu/hr natural gas-fired, dew-point heater is used to heat natural gas prior to its use as fuel for the combustion turbines in order to prevent condensed liquids in the natural gas from damaging the combustor sections of the turbines. The heater operates any time either of the combustion turbines is firing natural gas.

## Emergency Fire-Water Pump

An approximate 121 horsepower diesel-fired emergency fire-water pump used only during emergency situations to operate the plant's fire-fighting equipment. However, the fire-water pump is operated (typically for a few hours) on a monthly basis to maintain the integrity and operational readiness of the equipment. Annual hours of operation are anticipated to be less than 100 hours per year during non-emergency situations.

### **FOPs at Site**

The "application area" consists of the emission units and that portion of the site included in the application and this permit. Multiple FOPs may be issued to a site in accordance with 30 TAC § 122.201(e). When there is only one area for the site, then the application information and permit will include all units at the site. Additional FOPs that exist at the site, if any, are listed below.

Additional FOPs: None

### **Major Source Pollutants**

The table below specifies the pollutants for which the site is a major source:

Major Pollutants	NO <sub>x</sub> , CO
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### **Reading State of Texas's Federal Operating Permit**

The Title V Federal Operating Permit (FOP) lists all state and federal air emission regulations and New Source Review (NSR) authorizations (collectively known as "applicable requirements") that apply at a particular site or permit area (in the event a site has multiple FOPs). **The FOP does not authorize new emissions or new construction activities.** The FOP begins with an introductory page which is common to all Title V permits. This page gives the details of the company, states the authority of the issuing agency, requires the company to operate in accordance with this permit and 30 Texas Administrative Code (TAC) Chapter 122, requires adherence with NSR requirements of 30 TAC Chapter 116, and finally indicates the permit number and the issuance date.

This is followed by the table of contents, which is generally composed of the following elements. Not all permits will have all of the elements.

- General Terms and Conditions
- Special Terms and Conditions
  - Emissions Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting
  - Additional Monitoring Requirements
  - New Source Review Authorization Requirements
  - Compliance Requirements
  - Protection of Stratosphere Ozone
  - Permit Location
  - Permit Shield (30 TAC § 122.148)
- Attachments
  - Applicable Requirements Summary
    - Unit Summary
    - Applicable Requirements Summary
  - Additional Monitoring Requirements
  - Permit Shield
  - New Source Review Authorization References
  - Compliance Plan
  - Alternative Requirements

- Appendix A
  - Acronym list
- Appendix B
  - Copies of major NSR authorizations

## General Terms and Conditions

The General Terms and Conditions are the same and appear in all permits. The first paragraph lists the specific citations for 30 TAC Chapter 122 requirements that apply to all Title V permit holders. The second paragraph describes the requirements for record retention. The third paragraph provides details for voiding the permit, if applicable. The fourth paragraph states that the permit holder shall comply with the requirements of 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit. The fifth paragraph provides details on submission of reports required by the permit.

## Special Terms and Conditions

Emissions Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting. The TCEQ has designated certain applicable requirements as site-wide requirements. A site-wide requirement is a requirement that applies uniformly to all the units or activities at the site. Units with only site-wide requirements are addressed on Form OP-REQ1 and are not required to be listed separately on a OP-UA Form or Form OP-SUM. Form OP-SUM must list all units addressed in the application and provide identifying information, applicable OP-UA Forms, and preconstruction authorizations. The various OP-UA Forms provide the characteristics of each unit from which applicable requirements are established. Some exceptions exist as a few units may have both site-wide requirements and unit specific requirements.

Other conditions. The other entries under special terms and conditions are in general terms referring to compliance with the more detailed data listed in the attachments.

## Attachments

Applicable Requirements Summary. The first attachment, the Applicable Requirements Summary, has two tables, addressing unit specific requirements. The first table, the Unit Summary, includes a list of units with applicable requirements, the unit type, the applicable regulation, and the requirement driver. The intent of the requirement driver is to inform the reader that a given unit may have several different operating scenarios and the differences between those operating scenarios.

The applicable requirements summary table provides the detailed citations of the rules that apply to the various units. For each unit and operating scenario, there is an added modifier called the “index number,” detailed citations specifying monitoring and testing requirements, recordkeeping requirements, and reporting requirements. The data for this table are based on data supplied by the applicant on the OP-SUM and various OP-UA forms.

Additional Monitoring Requirement. The next attachment includes additional monitoring the applicant must perform to ensure compliance with the applicable standard. Compliance assurance monitoring (CAM) is often required to provide a reasonable assurance of compliance with applicable emission limitations/standards for large emission units that use control devices to achieve compliance with applicant requirements. When necessary, periodic monitoring (PM) requirements are specified for certain parameters (i.e. feed rates, flow rates, temperature, fuel type and consumption, etc.) to determine if a term and condition or emission unit is operating within specified limits to control emissions. These additional monitoring approaches may be required for two reasons. First, the applicable rules do not adequately specify monitoring requirements (exception- Maximum Achievable Control Technology Standards (MACTs) generally have sufficient monitoring), and second, monitoring may be required to fill gaps in the monitoring requirements of certain applicable requirements. In situations where the NSR permit is the applicable requirement requiring extra monitoring for a specific emission unit, the preferred solution is to have the monitoring requirements in the NSR permit updated so that all NSR requirements are consolidated in the NSR permit.

Permit Shield. A permit may or may not have a permit shield, depending on whether an applicant has applied for, and justified the granting of, a permit shield. A permit shield is a special condition included in the permit document stating that

compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirement(s) or specified applicable state-only requirement(s).

**New Source Review Authorization References.** All activities which are related to emissions in the state of Texas must have a NSR authorization prior to beginning construction. This section lists all units in the permit and the NSR authorization that allowed the unit to be constructed or modified. Units that do not have unit specific applicable requirements other than the NSR authorization do not need to be listed in this attachment. While NSR permits are not physically a part of the Title V permit, they are legally incorporated into the Title V permit by reference. Those NSR permits whose emissions exceed certain PSD/NA thresholds must also undergo a Federal review of federally regulated pollutants in addition to review for state regulated pollutants.

**Compliance Plan.** A permit may have a compliance schedule attachment for listing corrective actions plans for any emission unit that is out of compliance with an applicable requirement.

**Alternative Requirements.** This attachment will list any alternative monitoring plans or alternative means of compliance for applicable requirements that have been approved by the EPA Administrator and/or the TCEQ Executive Director.

## Appendix A

**Acronym list.** This attachment lists the common acronyms used when discussing the FOPs.

## Appendix B

Copies of major NSR authorizations applicable to the units covered by this permit have been included in this Appendix, to ensure that all interested persons can access those authorizations.

### **Stationary vents subject to 30 TAC Chapter 111, Subchapter A, § 111.111(a)(1)(B) addressed in the Special Terms and Conditions**

The site contains stationary vents with a flowrate less than 100,000 actual cubic feet per minute (acfm) and constructed after January 31, 1972 which are limited, over a six-minute average, to 20% opacity as required by 30 TAC § 111.111(a)(1)(B). As a site may have a large number of stationary vents that fall into this category, they are not required to be listed individually in the permit's Applicable Requirement Summary. This is consistent with EPA's White Paper for Streamlined Development of Part 70 Permit Applications, July 10, 1995, that states that requirements that apply identically to emission units at a site can be treated on a generic basis such as source-wide opacity limits.

Periodic monitoring is specified in Special Term and Condition 3 for stationary vents subject to 30 TAC § 111.111(a)(1)(B) to verify compliance with the 20% opacity limit. These vents are not expected to produce visible emissions during normal operation. The TCEQ evaluated the probability of these sources violating the opacity standards and determined that there is a very low potential that an opacity standard would be exceeded. It was determined that continuous monitoring for these sources is not warranted as there would be very limited environmental benefit in continuously monitoring sources that have a low potential to produce visible emissions. Therefore, the TCEQ set the visible observation monitoring frequency for these sources to once per calendar quarter.

The TCEQ has exempted vents that are not capable of producing visible emissions from periodic monitoring requirements. These vents include sources of colorless VOCs, non-fuming liquids, and other materials that cannot produce emissions that obstruct the transmission of light. Passive ventilation vents, such as plumbing vents, are also included in this category. Since this category of vents are not capable of producing opacity due to the physical or chemical characteristics of the emission source, periodic monitoring is not required as it would not yield any additional data to assure compliance with the 20% opacity standard of 30 TAC § 111.111(a)(1)(B).

In the event that visible emissions are detected, either through the quarterly observation or other credible evidence, such as observations from company personnel, the permit holder shall either report a deviation or perform a Test Method 9 observation to determine the opacity consistent with the 6-minute averaging time specified in 30 TAC § 111.111(a)(1)(B). An additional provision is included to monitor combustion sources more frequently than quarterly if alternate fuels are

burned for periods greater than 24 consecutive hours. This will address possible emissions that may arise when switching fuel types.

### **Stationary Vents subject to 30 TAC Chapter 111 not addressed in the Special Terms and Conditions**

All other stationary vents subject to 30 TAC Chapter 111 not covered in the Special Terms and Conditions are listed in the permit's Applicable Requirement Summary. The basis for the applicability determinations for these vents are listed in the Determination of Applicable Requirements table.

### **Federal Regulatory Applicability Determinations**

The following chart summarizes the applicability of the principal air pollution regulatory programs to the permit area:

<b>Regulatory Program</b>	<b>Applicability (Yes/No)</b>
Prevention of Significant Deterioration (PSD)	Yes
Nonattainment New Source Review (NNSR)	No
Minor NSR	Yes
40 CFR Part 60 - New Source Performance Standards	Yes
40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants (NESHAPs)	No
40 CFR Part 63 - NESHAPs for Source Categories	Yes
Title IV (Acid Rain) of the Clean Air Act (CAA)	Yes
Title V (Federal Operating Permits) of the CAA	Yes
Title VI (Stratospheric Ozone Protection) of the CAA	No
CSAPR (Cross-State Air Pollution Rule)	Yes

### **Basis for Applying Permit Shields**

An operating permit applicant has the opportunity to specifically request a permit shield to document that specific applicable requirements do not apply to emission units in the permit. A permit shield is a special condition stating that compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements. A permit shield has been requested in the application for specific emission units. For the permit shield requests that have been approved, the basis of determination for regulations that the owner/operator need not comply with are located in the "Permit Shield" attachment of the permit.

### **Acid Rain Permit**

The permitted area is subject to Federal Clean Air Act Title IV Acid Rain rules for Phase II units, as codified in 40 CFR Parts 72 through 78, because it meets the definition of "affected source." Applicability of affected sources are defined in 40 CFR § 72.6 and include those sources that burn fossil fuel, and generates electricity for sale. Under 40 CFR Part 72, incorporated by reference into 30 TAC Chapter 122, all acid rain permits must contain specific terms and conditions, including monitoring, reporting, recordkeeping and excess emission requirements, established by the U.S. EPA. The Title

IV permitting procedures are described within 30 TAC Chapter 122, Subchapter E. The applicable requirements of the Acid Rain Permit are contained in the Special Terms and Conditions of the FOP. The Acid Rain permit is effective as of the date of the issuance of the FOP and has a term ending in concurrence with the FOP.

### **Cross-State Air Pollution Rule**

The Cross-State Air Pollution Rule (CSAPR) was established to mitigate the interstate transport of NO<sub>x</sub> and SO<sub>2</sub> which contribute to the formation of fine particles (PM 2.5) and ground-level ozone and has replaced the previous Clean Air Interstate Rule (CAIR) program. The EPA has promulgated a model cap and trade program in 40 CFR Part 97 to implement CSAPR. This rule has been adopted by reference into 30 TAC Chapter 122 as part of an effective rulemaking (Rule Project No. 2016-012-122-AI), which included the repeal of 30 TAC Chapter 122, Subchapter E, Division 2: Clean Air Interstate Rule.

The permitted area is subject to CSAPR as it contains units that meet a definition of a CSAPR unit in 40 CFR Part 97 (CSAPR NO<sub>x</sub> and SO<sub>2</sub> Trading Programs). The applicable CSAPR requirements are contained in the Special Terms and Conditions of the FOP.

### **Insignificant Activities**

In general, units not meeting the criteria for inclusion on either Form OP-SUM or Form OP-REQ1 are not required to be addressed in the operating permit application. Examples of these types of units include, but are not limited to, the following:

1. Office activities such as photocopying, blueprint copying, and photographic processes.
2. Sanitary sewage collection and treatment facilities other than those used to incinerate wastewater treatment plant sludge. Stacks or vents for sanitary sewer plumbing traps are also included.
3. Food preparation facilities including, but not limited to, restaurants and cafeterias used for preparing food or beverages primarily for consumption on the premises.
4. Outdoor barbecue pits, campfires, and fireplaces.
5. Laundry dryers, extractors, and tumblers processing bedding, clothing, or other fabric items generated primarily at the premises. This does not include emissions from dry cleaning systems using perchloroethylene or petroleum solvents.
6. Facilities storing only dry, sweet natural gas, including natural gas pressure regulator vents.
7. Any air separation or other industrial gas production, storage, or packaging facility. Industrial gases, for purposes of this list, include only oxygen, nitrogen, helium, neon, argon, krypton, and xenon.
8. Storage and handling of sealed portable containers, cylinders, or sealed drums.
9. Vehicle exhaust from maintenance or repair shops.
10. Storage and use of non-VOC products or equipment for maintaining motor vehicles operated at the site (including but not limited to, antifreeze and fuel additives).
11. Air contaminant detectors and recorders, combustion controllers and shut-off devices, product analyzers, laboratory analyzers, continuous emissions monitors, other analyzers and monitors, and emissions associated with sampling activities. Exception to this category includes sampling activities that are deemed fugitive emissions and under a regulatory leak detection and repair program.
12. Bench scale laboratory equipment and laboratory equipment used exclusively for chemical and physical analysis, including but not limited to, assorted vacuum producing devices and laboratory fume hoods.
13. Steam vents, steam leaks, and steam safety relief valves, provided the steam (or boiler feedwater) has not contacted other materials or fluids containing regulated air pollutants other than boiler water treatment chemicals.
14. Storage of water that has not contacted other materials or fluids containing regulated air pollutants other than boiler water treatment chemicals.
15. Well cellars.
16. Fire or emergency response equipment and training, including but not limited to, use of fire control equipment including equipment testing and training, and open burning of materials or fuels associated with firefighting training.
17. Crucible or pot furnaces with a brim full capacity of less than 450 cubic inches of any molten metal.
18. Equipment used exclusively for the melting or application of wax.
19. All closed tumblers used for the cleaning or deburring of metal products without abrasive blasting, and all open tumblers with a batch capacity of 1,000 lbs. or less.

20. Shell core and shell mold manufacturing machines.
21. Sand or investment molds with a capacity of 100 lbs. or less used for the casting of metals;
22. Equipment used for inspection of metal products.
23. Equipment used exclusively for rolling, forging, pressing, drawing, spinning, or extruding either hot or cold metals by some mechanical means.
24. Instrument systems utilizing air, natural gas, nitrogen, oxygen, carbon dioxide, helium, neon, argon, krypton, and xenon.
25. Battery recharging areas.
26. Brazing, soldering, or welding equipment.

## **Determination of Applicable Requirements**

The tables below include the applicability determinations for the emission units, the index number(s) where applicable, and all relevant unit attribute information used to form the basis of the applicability determination. The unit attribute information is a description of the physical properties of an emission unit which is used to determine the requirements to which the permit holder must comply. For more information about the descriptions of the unit attributes specific Unit Attribute Forms may be viewed at [www.tceq.texas.gov/permitting/air/nav/air\\_all\\_ua\\_forms.html](http://www.tceq.texas.gov/permitting/air/nav/air_all_ua_forms.html).

A list of unit attribute forms is included at the end of this document. Some examples of unit attributes include construction date; product stored in a tank; boiler fuel type; etc.. Generally, multiple attributes are needed to determine the requirements for a given emission unit and index number. The table below lists these attributes in the column entitled "Basis of Determination." Attributes that demonstrate that an applicable requirement applies will be the factual basis for the specific citations in an applicable requirement that apply to a unit for that index number. The TCEQ Air Permits Division has developed flowcharts for determining applicability of state and federal regulations based on the unit attribute information in a Decision Support System (DSS). These flowcharts can be accessed via the internet at [www.tceq.texas.gov/permitting/air/nav/air\\_supportsys.html](http://www.tceq.texas.gov/permitting/air/nav/air_supportsys.html). The Air Permits Division staff may also be contacted for assistance at (512) 239-1250.

The attributes for each unit and corresponding index number provide the basis for determining the specific legal citations in an applicable requirement that apply, including emission limitations or standards, monitoring, recordkeeping, and reporting. The rules were found to apply or not apply by using the unit attributes as answers to decision questions found in the flowcharts of the DSS. Some additional attributes indicate which legal citations of a rule apply. The legal citations that apply to each emission unit may be found in the Applicable Requirements Summary table of the draft permit. There may be some entries or rows of units and rules not found in the permit, or if the permit contains a permit shield, repeated in the permit shield area. These are sets of attributes that describe negative applicability, or; in other words, the reason why a potentially applicable requirement does not apply.

If applicability determinations have been made which differ from the available flowcharts, an explanation of the decisions involved in the applicability determination is specified in the column "Changes and Exceptions to RRT." If there were no exceptions to the DSS, then this column has been removed.

The draft permit includes all emission limitations or standards, monitoring, recordkeeping and reporting required by each applicable requirement. If an applicable requirement does not require monitoring, recordkeeping, or reporting, the word "None" will appear in the Applicable Requirements Summary table. If additional periodic monitoring is required for an applicable requirement, it will be explained in detail in the portion of this document entitled "Rationale for Compliance Assurance Monitoring (CAM)/ Periodic Monitoring Methods Selected."

When attributes demonstrate that a unit is not subject to an applicable requirement, the applicant may request a permit shield for those items. The portion of this document entitled "Basis for Applying Permit Shields" specifies which units, if any, have a permit shield.

## **Operational Flexibility**

When an emission unit has multiple operating scenarios, it will have a different index number associated with each operating condition. This means that units are permitted to operate under multiple operating conditions. The applicable requirements for each operating condition are determined by a unique set of unit attributes. For example, a tank may store two different products at different points in time. The tank may, therefore, need to comply with two distinct sets of



requirements, depending on the product that is stored. Both sets of requirements are included in the permit, so that the permit holder may store either product in the tank.

### Determination of Applicable Requirements

Unit ID	Regulation	Index Number	Basis of Determination*	Changes and Exceptions to DSS**
FWP	40 CFR Part 60, Subpart IIII	60IIII	<p>Applicability Date = Stationary CI ICE commenced construction, reconstruction, or modification after 07/11/2005.</p> <p>Diesel = Diesel fuel is used.</p> <p>Kilowatts = Power rating is greater than or equal to 75 KW and less than 130 KW.</p> <p>Exemptions = The CI ICE is not exempt due to national security, testing at an engine test cell/stand or as a temporary replacement.</p> <p>Displacement = Displacement is less than 10 liters per cylinder.</p> <p>Service = CI ICE is a fire-pump engine, an emergency engine certified to National Fire Protection Association requirements.</p> <p>Standards = The emergency CI ICE meets the standards applicable to non-emergency engines.</p> <p>Commencing = CI ICE was newly constructed after 07/11/2005.</p> <p>Compliance Option = The CI ICE and control device is installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions.</p> <p>Manufacture Date = Date of manufacture was after 07/01/2006.</p> <p>Model Year = CI ICE was manufactured in model year 2014.</p>	<p>The following changes are included because the engine will not be operated for the purposes of §60.4211(f)(2)(ii) or § 60.4211(f)(2)(iii) or [G]§60.4211(f)(3)(i):</p> <p>-- Affected Pollutant - PM, NMHC and NO<sub>x</sub>:</p> <p>Added Related Standard § 60.4211(f)</p> <p>Added Related Standard § 60.4211(f)(1)</p> <p>Added Related Standard § 60.4211(f)(2)</p> <p>Added Related Standard § 60.4211(f)(2)(i)</p> <p>Added Related Standard § 60.4211(f)(3)</p> <p>Deleted Related Standard [G]§ 60.4211(f)</p> <p>Deleted Reporting [G]§ 60.4214(d)</p>
FWP	40 CFR Part 63, Subpart ZZZZ	63ZZZZ	<p>HAP Source = Any stationary source of hazardous air pollutants that is not a major source as defined in 40 CFR § 63.2.</p> <p>Brake HP = Stationary RICE with a brake HP greater than or equal to 100 HP and less than 250 HP.</p> <p>Construction/Reconstruction Date = Commenced construction or reconstruction on or after June 12, 2006.</p>	

Unit ID	Regulation	Index Number	Basis of Determination*	Changes and Exceptions to DSS**
GRP-CT	40 CFR Part 60, Subpart KKKK	60KKKK-1	<p>75% of Peak = The combustion turbine does not operate at less than 75% of peak load or at temperatures less than zero degrees F.</p> <p>Location = The turbine is not located in a noncontinental area nor in a continental area for which the Administrator has determined does not have access to natural gas and that the removal of sulfur compounds would do more environmental harm than benefit.</p> <p>Unit Type = Simple Combustion Turbine</p> <p>Construction/Modification Date = Turbine was constructed after February 18, 2005.</p> <p>SO<sub>2</sub> Standard = The heat input based SO<sub>2</sub> emission standard in § 60.4330(a)(2) or (a)(3) is being used.</p> <p>Fuel Monitoring = All fuels used are demonstrated not to exceed the potential emissions standard in § 60.4365.</p> <p>Heat Input = Turbine has a heat input at peak load of 850 MMBtu/hr or greater.</p> <p>Fuel Quality = Fuel is demonstrated not to exceed emission standard by characteristics in purchase contract or tariff sheet.</p> <p>NO<sub>x</sub> Control = NO<sub>x</sub> emissions are not being controlled by steam or water injection.</p> <p>Subject to Da = The combustion turbine is not located at an integrated gasification combined cycle electric utility steam generating unit subject to Subpart Da of Part 60.</p> <p>NO<sub>x</sub> Monitoring = A diluent NO<sub>x</sub> CEMS is used.</p> <p>Performance Test = Sulfur content of the fuel combusted in the turbine is being periodically determined.</p> <p>Service Type = Service other than emergency service, as defined in § 60.4420(i), or research and development.</p> <p>NO<sub>x</sub> Standard = The parts per million NO<sub>x</sub> emission standard in Table 1 is being used.</p> <p>Fuel Type = 100% natural gas.</p>	<p>The following changes are included because the natural gas fired turbines do not fire distillate oil or any combination of fuels:</p> <p>-- Affected Pollutant - NO<sub>x</sub>:</p> <p>Deleted Related Standard § 60.4325</p> <p>Deleted Monitoring/Testing § 60.4400(b)(1)</p>

Unit ID	Regulation	Index Number	Basis of Determination*	Changes and Exceptions to DSS**
GRP-CT	40 CFR Part 60, Subpart KKKK	60KKKK-2	<p>75% of Peak = The combustion turbine does not operate at less than 75% of peak load or at temperatures less than zero degrees F.</p> <p>Location = The turbine is not located in a noncontinental area nor in a continental area for which the Administrator has determined does not have access to natural gas and that the removal of sulfur compounds would do more environmental harm than benefit.</p> <p>Unit Type = Simple Combustion Turbine</p> <p>Construction/Modification Date = Turbine was constructed after February 18, 2005.</p> <p>SO<sub>2</sub> Standard = The heat input based SO<sub>2</sub> emission standard in § 60.4330(a)(2) or (a)(3) is being used.</p> <p>Fuel Monitoring = All fuels used are demonstrated not to exceed the potential emissions standard in § 60.4365.</p> <p>Heat Input = Turbine has a heat input at peak load of 850 MMBtu/hr or greater.</p> <p>Fuel Quality = Fuel is demonstrated not to exceed emission standard by representative fuel sampling data.</p> <p>NO<sub>x</sub> Control = NO<sub>x</sub> emissions are not being controlled by steam or water injection.</p> <p>Subject to Da = The combustion turbine is not located at an integrated gasification combined cycle electric utility steam generating unit subject to Subpart Da of Part 60.</p> <p>NO<sub>x</sub> Monitoring = A diluent NO<sub>x</sub> CEMS is used.</p> <p>Performance Test = Sulfur content of the fuel combusted in the turbine is being periodically determined.</p> <p>Service Type = Service other than emergency service, as defined in § 60.4420(i), or research and development.</p> <p>NO<sub>x</sub> Standard = The parts per million NO<sub>x</sub> emission standard in Table 1 is being used.</p> <p>Fuel Type = 100% natural gas.</p>	<p>The following changes are included because the natural gas fired turbines do not fire distillate oil or any combination of fuels:</p> <p>-- Affected Pollutant - NO<sub>x</sub>:</p> <p>Deleted Related Standard § 60.4325</p> <p>Deleted Monitoring/Testing § 60.4400(b)(1)</p>
DPT HTR-STK	30 TAC Chapter 111, Visible Emissions	R1111	<p>Alternate Opacity Limitation = Not complying with an alternate opacity limit under 30 TAC § 111.113.</p> <p>Vent Source = The source of the vent is not a steam generator fired by solid fossil fuel, oil or a mixture of oil and gas and is not a catalyst regenerator for a fluid bed catalytic cracking unit.</p> <p>Opacity Monitoring System = Optical instrument capable of measuring the opacity of emissions is not installed in the vent or optical instrumentation does not meet the requirements of § 111.111(a)(1)(D), or the vent stream does not qualify for the exemption in § 111.111(a)(3).</p> <p>Construction Date = After January 31, 1972</p> <p>Effluent Flow Rate = Effluent flow rate is less than 100,000 actual cubic feet per minute.</p>	

Unit ID	Regulation	Index Number	Basis of Determination*	Changes and Exceptions to DSS**
GRP-CTSTK	30 TAC Chapter 111, Visible Emissions	R1111	<p>Alternate Opacity Limitation = Not complying with an alternate opacity limit under 30 TAC § 111.113.</p> <p>Vent Source = The source of the vent is not a steam generator fired by solid fossil fuel, oil or a mixture of oil and gas and is not a catalyst regenerator for a fluid bed catalytic cracking unit.</p> <p>Opacity Monitoring System = Optical instrument capable of measuring the opacity of emissions is not installed in the vent or optical instrumentation does not meet the requirements of § 111.111(a)(1)(D), or the vent stream does not qualify for the exemption in § 111.111(a)(3).</p> <p>Construction Date = After January 31, 1972</p> <p>Effluent Flow Rate = Effluent flow rate is at least 100,000 actual cubic feet per minute.</p>	

\* - The "unit attributes" or operating conditions that determine what requirements apply

\*\* - Notes changes made to the automated results from the DSS, and a brief explanation why

## NSR Versus Title V FOP

The state of Texas has two Air permitting programs, New Source Review (NSR) and Title V Federal Operating Permits. The two programs are substantially different both in intent and permit content.

NSR is a preconstruction permitting program authorized by the Texas Clean Air Act and Title I of the Federal Clean Air Act (FCAA). The processing of these permits is governed by 30 Texas Administrative Code (TAC) Chapter 116.111. The Title V Federal Operating Program is a federal program authorized under Title V of the FCAA that has been delegated to the state of Texas to administer and is governed by 30 TAC Chapter 122. The major differences between the two permitting programs are listed in the table below:

NSR Permit	Federal Operating Permit(FOP)
Issued Prior to new Construction or modification of an existing facility	For initial permit with application shield, can be issued after operation commences; significant revisions require approval prior to operation.
Authorizes air emissions	Codifies existing applicable requirements, does not authorize new emissions
Ensures issued permits are protective of the environment and human health by conducting a health effects review and that requirement for best available control technology (BACT) is implemented.	Applicable requirements listed in permit are used by the inspectors to ensure proper operation of the site as authorized. Ensures that adequate monitoring is in place to allow compliance determination with the FOP.
Up to two Public notices may be required. Opportunity for public comment and contested case hearings for some authorizations.	One public notice required. Opportunity for public comments. No contested case hearings.
Applies to all point source emissions in the state.	Applies to all major sources and some non-major sources identified by the EPA.
Applies to facilities: a portion of site or individual emission sources	One or multiple FOPs cover the entire site (consists of multiple facilities)
Permits include terms and conditions under which the applicant must construct and operate its various equipment and processes on a facility basis.	Permits include terms and conditions that specify the general operational requirements of the site; and also include codification of all applicable requirements for emission units at the site.
Opportunity for EPA review for Federal Prevention of Significant Deterioration (PSD) and Nonattainment (NA) permits for major sources.	Opportunity for EPA review, Affected states review, and a Public petition period for every FOP.
Permits have a table listing maximum emission limits for pollutants	Permit has an applicable requirements table and Periodic Monitoring (PM) / Compliance Assurance Monitoring (CAM) tables which document applicable monitoring requirements.
Permits can be altered or amended upon application by company. Permits must be issued before construction or modification of facilities can begin.	Permits can be revised through several revision processes, which provide for different levels of public notice and opportunity to comment. Changes that would be significant revisions require that a revised permit be issued before those changes can be operated.
NSR permits are issued independent of FOP requirements.	FOP are independent of NSR permits, but contain a list of all NSR permits incorporated by reference

## New Source Review Requirements

Below is a list of the New Source Review (NSR) permits for the permitted area. These NSR permits are incorporated by reference into the operating permit and are enforceable under it. These permits can be found in the main TCEQ file room,

located on the first floor of Building E, 12100 Park 35 Circle, Austin, Texas. The Public Education Program may be contacted at 1-800-687-4040 or the Air Permits Division (APD) may be contacted at 1-512-239-1250 for help with any question.

Additionally, the site contains emission units that are permitted by rule under the requirements of 30 TAC Chapter 106, Permits by Rule. The following table specifies the permits by rule that apply to the site. All current permits by rule are contained in Chapter 106. Outdated 30 TAC Chapter 106 permits by rule may be viewed at the following Web site:

[www.tceq.texas.gov/permitting/air/permitbyrule/historical\\_rules/old106list/index106.html](http://www.tceq.texas.gov/permitting/air/permitbyrule/historical_rules/old106list/index106.html)

Outdated Standard Exemption lists may be viewed at the following Web site:

[www.tceq.texas.gov/permitting/air/permitbyrule/historical\\_rules/oldselist/se\\_index.html](http://www.tceq.texas.gov/permitting/air/permitbyrule/historical_rules/oldselist/se_index.html)

The status of air permits and applications and a link to the Air Permits Remote Document Server is located at the following Web site:

[www.tceq.texas.gov/permitting/air/nav/air\\_status\\_permits.html](http://www.tceq.texas.gov/permitting/air/nav/air_status_permits.html)

#### New Source Review Authorization References

Prevention of Significant Deterioration (PSD) Permits	
PSD Permit No.: PSDTX1366	Issuance Date: 01/31/2017
PSD Permit No.: GHGPSDTX49*	Issuance Date: 08/24/2016
Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 110423	Issuance Date: 01/31/2017
Permits By Rule (30 TAC Chapter 106) for the Application Area	
Number: 106.102	Version No./Date: 09/04/2000
Number: 106.122	Version No./Date: 09/04/2000
Number: 106.183	Version No./Date: 09/04/2000
Number: 106.227	Version No./Date: 09/04/2000
Number: 106.242	Version No./Date: 09/04/2000
Number: 106.261	Version No./Date: 11/01/2003
Number: 106.262	Version No./Date: 11/01/2003
Number: 106.263	Version No./Date: 11/01/2001
Number: 106.265	Version No./Date: 09/04/2000
Number: 106.266	Version No./Date: 09/04/2000
Number: 106.355	Version No./Date: 11/01/2001
Number: 106.371	Version No./Date: 09/04/2000
Number: 106.454	Version No./Date: 11/01/2001
Number: 106.471	Version No./Date: 09/04/2000
Number: 106.472	Version No./Date: 09/04/2000
Number: 106.473	Version No./Date: 09/04/2000

## New Source Review Authorization References

Number: 106.511	Version No./Date: 09/04/2000
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\* For reference, EPA issued permit PSD-TX-1366-GHG has been assigned permit number GHGPSDTX49.

### Emission Units and Emission Points

In air permitting terminology, any source capable of generating emissions (for example, an engine or a sandblasting area) is called an Emission Unit. For purposes of Title V, emission units are specifically listed in the operating permit when they have applicable requirements other than New Source Review (NSR), or when they are listed in the permit shield table.

The actual physical location where the emissions enter the atmosphere (for example, an engine stack or a sand-blasting yard) is called an emission point. For New Source Review preconstruction permitting purposes, every emission unit has an associated emission point. Emission limits are listed in an NSR permit, associated with an emission point. This list of emission points and emission limits per pollutant is commonly referred to as the "Maximum Allowable Emission Rate Table", or "MAERT" for short. Specifically, the MAERT lists the Emission Point Number (EPN) that identifies the emission point, followed immediately by the Source Name, identifying the emission unit that is the source of those emissions on this table.

Thus, by reference, an emission unit in a Title V operating permit is linked by reference number to an NSR authorization, and its related emission point.

### Monitoring Sufficiency

Federal and state rules, 40 CFR § 70.6(a)(3)(i)(B) and 30 TAC § 122.142(c) respectively, require that each federal operating permit include additional monitoring for applicable requirements that lack periodic or instrumental monitoring (which may include recordkeeping that serves as monitoring) that yields reliable data from a relevant time period that are representative of the emission unit's compliance with the applicable emission limitation or standard. Furthermore, the federal operating permit must include compliance assurance monitoring (CAM) requirements for emission sources that meet the applicability criteria of 40 CFR Part 64 in accordance with 40 CFR § 70.6(a)(3)(i)(A) and 30 TAC § 122.604(b).

With the exception of any emission units listed in the Periodic Monitoring or CAM Summaries in the FOP, the TCEQ Executive Director has determined that the permit contains sufficient monitoring, testing, recordkeeping, and reporting requirements that assure compliance with the applicable requirements. If applicable, each emission unit that requires additional monitoring in the form of periodic monitoring or CAM is described in further detail under the Rationale for CAM/PM Methods Selected section following this paragraph.

### Rationale for Compliance Assurance Monitoring (CAM)/ Periodic Monitoring Methods Selected

#### Periodic Monitoring:

The Federal Clean Air Act requires that each federal operating permit include monitoring sufficient to assure compliance with the terms and conditions of the permit. Most of the emission limits and standards applicable to emission units at Title V sources include adequate monitoring to show that the units meet the limits and standards. For those requirements that do not include monitoring, or where the monitoring is not sufficient to assure compliance, the federal operating permit must include such monitoring for the emission units affected. The following emission units are subject to periodic monitoring requirements because the emission units are subject to an emission limitation or standard for an air pollutant (or surrogate thereof) in an applicable requirement that does not already require monitoring, or the monitoring for the applicable requirement is not sufficient to assure compliance:



<b>Unit/Group/Process Information</b>	
ID No.: DPT HTR-STK	
Control Device ID No.: N/A	Control Device Type: N/A
<b>Applicable Regulatory Requirement</b>	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111
Pollutant: PM (OPACITY)	Main Standard: § 111.111(a)(1)(B)
<b>Monitoring Information</b>	
Indicator: Fuel Type	
Minimum Frequency: Annually	
Averaging Period: n/a	
Deviation Limit: Combust only pipeline quality natural gas (burn no alternate fuels)	
Basis of monitoring: Industry has demonstrated through performance tests and historical data that opacity and particulate matter standards are consistently met when combustion units fire natural gas only.	

Unit/Group/Process Information	
ID No.: GRP-CTSTK	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111
Pollutant: PM (OPACITY)	Main Standard: § 111.111(a)(1)(C)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually	
Averaging Period: n/a	
Deviation Limit: Combust only pipeline quality natural gas (burn no alternate fuels)	
Basis of monitoring: Industry has demonstrated through performance tests and historical data that opacity and particulate matter standards are consistently met when combustion units fire natural gas only.	

## Compliance Review

1. In accordance with 30 TAC Chapter 60, the compliance history was reviewed on May 5, 2016.

Site rating: N/A Company rating: N/A

(High < 0.10; Satisfactory ≥ 0.10 and ≤ 55; Unsatisfactory > 55)

2. Has the permit changed on the basis of the compliance history or site/company rating? .....No

## Site/Permit Area Compliance Status Review

1. Were there any out-of-compliance units listed on Form OP-ACPS? .....No

2. Is a compliance plan and schedule included in the permit? .....No

## Available Unit Attribute Forms

OP-UA1 - Miscellaneous and Generic Unit Attributes

OP-UA2 - Stationary Reciprocating Internal Combustion Engine Attributes

OP-UA3 - Storage Tank/Vessel Attributes

OP-UA4 - Loading/Unloading Operations Attributes

OP-UA5 - Process Heater/Furnace Attributes

OP-UA6 - Boiler/Steam Generator/Steam Generating Unit Attributes

OP-UA7 - Flare Attributes

OP-UA8 - Coal Preparation Plant Attributes

OP-UA9 - Nonmetallic Mineral Process Plant Attributes

OP-UA10 - Gas Sweetening/Sulfur Recovery Unit Attributes

OP-UA11 - Stationary Turbine Attributes

OP-UA12 - Fugitive Emission Unit Attributes

OP-UA13 - Industrial Process Cooling Tower Attributes

OP-UA14 - Water Separator Attributes

OP-UA15 - Emission Point/Stationary Vent/Distillation Operation/Process Vent Attributes

OP-UA16 - Solvent Degreasing Machine Attributes

OP-UA17 - Distillation Unit Attributes

OP-UA18 - Surface Coating Operations Attributes

OP-UA19 - Wastewater Unit Attributes

OP-UA20 - Asphalt Operations Attributes

OP-UA21 - Grain Elevator Attributes

OP-UA22 - Printing Attributes

OP-UA24 - Wool Fiberglass Insulation Manufacturing Plant Attributes

OP-UA25 - Synthetic Fiber Production Attributes

OP-UA26 - Electroplating and Anodizing Unit Attributes

OP-UA27 - Nitric Acid Manufacturing Attributes

OP-UA28 - Polymer Manufacturing Attributes

OP-UA29 - Glass Manufacturing Unit Attributes

OP-UA30 - Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mill Attributes

OP-UA31 - Lead Smelting Attributes

OP-UA32 - Copper and Zinc Smelting/Brass and Bronze Production Attributes

OP-UA33 - Metallic Mineral Processing Plant Attributes

OP-UA34 - Pharmaceutical Manufacturing

OP-UA35 - Incinerator Attributes

OP-UA36 - Steel Plant Unit Attributes

OP-UA37 - Basic Oxygen Process Furnace Unit Attributes

OP-UA38 - Lead-Acid Battery Manufacturing Plant Attributes

OP-UA39 - Sterilization Source Attributes

OP-UA40 - Ferroalloy Production Facility Attributes

OP-UA41 - Dry Cleaning Facility Attributes

OP-UA42 - Phosphate Fertilizer Manufacturing Attributes

OP-UA43 - Sulfuric Acid Production Attributes

OP-UA44 - Municipal Solid Waste Landfill/Waste Disposal Site Attributes

OP-UA45 - Surface Impoundment Attributes

OP-UA46 - Epoxy Resins and Non-Nylon Polyamides Production Attributes  
OP-UA47 - Ship Building and Ship Repair Unit Attributes  
OP-UA48 - Air Oxidation Unit Process Attributes  
OP-UA49 - Vacuum-Producing System Attributes  
OP-UA50 - Fluid Catalytic Cracking Unit Catalyst Regenerator/Fuel Gas Combustion Device/Claus Sulfur Recovery Plant Attributes  
OP-UA51 - Dryer/Kiln/Oven Attributes  
OP-UA52 - Closed Vent Systems and Control Devices  
OP-UA53 - Beryllium Processing Attributes  
OP-UA54 - Mercury Chlor-Alkali Cell Attributes  
OP-UA55 - Transfer System Attributes  
OP-UA56 - Vinyl Chloride Process Attributes  
OP-UA57 - Cleaning/Depainting Operation Attributes  
OP-UA58 - Treatment Process Attributes  
OP-UA59 - Coke By-Product Recovery Plant Attributes  
OP-UA60 - Chemical Manufacturing Process Unit Attributes  
OP-UA61 - Pulp, Paper, or Paperboard Producing Process Attributes  
OP-UA62 - Glycol Dehydration Unit Attributes  
OP-UA63 - Vegetable Oil Production Attributes